Claims of WO2004043628

Claims

1. A continuous casting mold for casting molten metals, particularly molten steel materials, at high casting rates to form polygonal billet, bloom, and preliminary section castings and the like, comprising a tubular mold made of copper or of copper alloys whose entry cross-section on the pouring-in side has a cross-section which is enlarged compared to the exit cross-section on the casting exit side and corner radii, characterized in that the inner geometrical cross-section form and the associated measurements are carried out analogous to the locally deducible quantity of the solidification heat at a specified casting rate and analogous to the expansion of the tubular mold.

2. The continuous casting mold according to claim 1, characterized in that the exterior form is at least designed with regard to the separate height ranges of the tubular mold analogously to the thermal expansion of the mold.

3. The continuous casting mold according to one of claims 1 or 2, characterized in that the tubular mold is formed with regard to its geometrical cross-section forms based on the respective steel grade.

4. The continuous casting mold according to one of claims 1 to 3, characterized in that the tubular mold exhibits in the area of the casting mirror a section of greater conicity corresponding to the greater contraction of the continuous casting.

5. The continuous casting mold according to one of claims 1 to 4, characterized in that under the section of greater conicity the tubular mold is designed with a continuously varying conicity corresponding to the casting shell growth and the contraction of the continuous casting.

6. The continuous casting mold according to one of claims 1 to 5, characterized in that under the section of greater conicity the wall volume of the tubular mold is variably designed according to the dissipated heat quantity per time unit.

7. The continuous casting mold according to claim 6, characterized in that the exterior surface of the tubular mold is enlarged by means of notches, ribs or the like in the areas of reduced wall volume.

8. The continuous casting mold according to one of claims 1 to 7, characterized in that starting at the entry cross-section a centric, approximately parabola-shaped recess is provided for each cross-section side.

9. The continuous casting mold according to claim 8, characterized in that the approximately parabola-shaped recess diminishes in the direction towards the casting exit side.

10. The continuous casting mold according to one of claims 8 or 9, characterized in that the length of the approximately parabola-shaped recess extends approximately into half the tubular mold height.

11. The continuous casting mold according to one of claims 8 to 10, characterized in that the length of the approximately parabola-shaped recess is adapted to the contraction measure at the height of the respective broadside and/or edge of the mold cross-section.

12. The continuous casting mold according to one of claims 8 to 11, characterized in that in the area of the corner radius there is each one plane-parallel surface connecting downwards which opposes an analogous counter surface in the inner cross-section form.